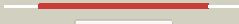


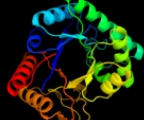
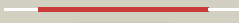







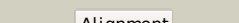



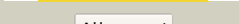



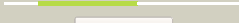
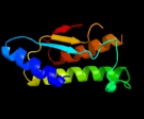
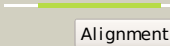
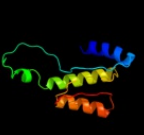


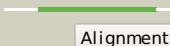

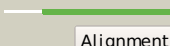

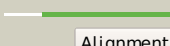

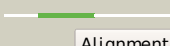

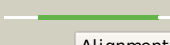
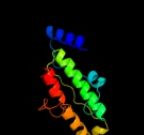
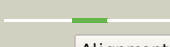


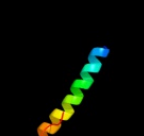


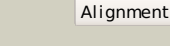
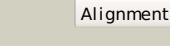

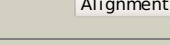
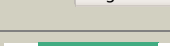



Phyre2

Email	l.a.kelley@imperial.ac.uk
Description	P75746
Date	Thu Jan 5 12:13:43 GMT 2012
Unique Job ID	32ebaa6d1c8841af

Detailed template information

#	Template	Alignment Coverage	3D Model	Confidence	% i.d.	Template Information
1	d2dfaa1	 Alignment		100.0	46	Fold: 7-stranded beta/alpha barrel Superfamily: Glycoside hydrolase/deacetylase Family: LamB/YcsF-like
2	d1v6ta_	 Alignment		100.0	43	Fold: 7-stranded beta/alpha barrel Superfamily: Glycoside hydrolase/deacetylase Family: LamB/YcsF-like
3	c2x5eA_	 Alignment		100.0	39	PDB header: unknown function Chain: A: PDB Molecule: upf0271 protein pa4511; PDBTitle: crystal structure of the hypothetical protein pa4511 from2 pseudomonas aeruginosa
4	d1xw8a_	 Alignment		100.0	95	Fold: 7-stranded beta/alpha barrel Superfamily: Glycoside hydrolase/deacetylase Family: LamB/YcsF-like
5	d2nlya1	 Alignment		91.1	16	Fold: 7-stranded beta/alpha barrel Superfamily: Glycoside hydrolase/deacetylase Family: Divergent polysaccharide deacetylase
6	c2c1iA_	 Alignment		89.5	18	PDB header: hydrolase Chain: A: PDB Molecule: peptidoglycan glcnac deacetylase; PDBTitle: structure of streptococcus pneumoniae peptidoglycan2 deacetylase (sppgda) d 275 n mutant.
7	d1ny1a_	 Alignment		87.4	15	Fold: 7-stranded beta/alpha barrel Superfamily: Glycoside hydrolase/deacetylase Family: NodB-like polysaccharide deacetylase
8	d1tz9a_	 Alignment		84.1	16	Fold: TIM beta/alpha-barrel Superfamily: Xylose isomerase-like Family: UxuA-like
9	c1w17A_	 Alignment		79.9	17	PDB header: hydrolase Chain: A: PDB Molecule: probable polysaccharide deacetylase pdaa; PDBTitle: structure of bacillus subtilis pdaa, a family 42 carbohydrate esterase.
10	c2qv5A_	 Alignment		65.7	15	PDB header: structural genomics, unknown function Chain: A: PDB Molecule: uncharacterized protein atu2773; PDBTitle: crystal structure of uncharacterized protein atu2773 from2 agrobacterium tumefaciens c58
11	d1ur4a_	 Alignment		65.4	22	Fold: TIM beta/alpha-barrel Superfamily: (Trans)glycosidases Family: beta-glycanases

12	c2fvka2	 Alignment		62.4	28	Fold: TIM beta/alpha-barrel Superfamily: Metallo-dependent hydrolases Family: Hydantoinase (dihydropyrimidinase), catalytic domain
13	c1e9zA_	 Alignment		58.9	25	PDB header: hydrolase Chain: A: PDB Molecule: urease subunit alpha; PDBTitle: crystal structure of helicobacter pylori urease
14	c1w8gA_	 Alignment		58.5	12	PDB header: plp-binding protein Chain: A: PDB Molecule: hypothetical upf0001 protein yggs; PDBTitle: crystal structure of e. coli k-12 yggs
15	c1tv1A_	 Alignment		58.1	21	PDB header: oxidoreductase Chain: A: PDB Molecule: protein ytnj; PDBTitle: structure of ytnj from bacillus subtilis
16	d1tv1a_	 Alignment		58.1	21	Fold: TIM beta/alpha-barrel Superfamily: Bacterial luciferase-like Family: Ssud-like monooxygenases
17	c3e0fA_	 Alignment		57.3	18	PDB header: hydrolase Chain: A: PDB Molecule: putative metal-dependent phosphoesterase; PDBTitle: crystal structure of a putative metal-dependent phosphoesterase2 (bad_1165) from bifidobacterium adolescentis atcc 15703 at 2.40 a3 resolution
18	c3qxbB_	 Alignment		56.5	15	PDB header: isomerase Chain: B: PDB Molecule: putative xylose isomerase; PDBTitle: crystal structure of a putative xylose isomerase (yp_426450.1) from rhodospirillum rubrum atcc 11170 at 1.90 a resolution
19	d1e9ya2	 Alignment		56.2	25	Fold: Urease, gamma-subunit Superfamily: Urease, gamma-subunit Family: Urease, gamma-subunit
20	d1ejxa_	 Alignment		54.4	22	Fold: Urease, gamma-subunit Superfamily: Urease, gamma-subunit Family: Urease, gamma-subunit
21	d4ubpa_	 Alignment	not modelled	52.9	19	Fold: Urease, gamma-subunit Superfamily: Urease, gamma-subunit Family: Urease, gamma-subunit
22	c3tsuA_	 Alignment	not modelled	51.3	23	PDB header: transferase Chain: A: PDB Molecule: transcriptional regulatory protein; PDBTitle: crystal structure of e. coli hypf with amp-pnp and carbamoyl phosphate
23	c1y10C_	 Alignment	not modelled	50.0	11	PDB header: lyase Chain: C: PDB Molecule: hypothetical protein rv1264/mt1302; PDBTitle: mycobacterial adenyl cyclase rv1264, holoenzyme, inhibited state
24	c2o7jA_	 Alignment	not modelled	47.5	13	PDB header: sugar binding protein Chain: A: PDB Molecule: oligopeptide abc transporter, periplasmic PDBTitle: the x-ray crystal structure of a thermophilic cellobiose2 binding protein bound with cellopentaose
25	c3noyA_	 Alignment	not modelled	45.8	25	PDB header: oxidoreductase Chain: A: PDB Molecule: 4-hydroxy-3-methylbut-2-en-1-yl di phosphate synthase; PDBTitle: crystal structure of ispg (gcpe)
26	d2nu7b1	 Alignment	not modelled	43.1	17	Fold: Flavodoxin-like Superfamily: Succinyl-CoA synthetase domains Family: Succinyl-CoA synthetase domains
27	c3bdkB_	 Alignment	not modelled	43.0	26	PDB header: lyase Chain: B: PDB Molecule: d-mannonate dehydratase; PDBTitle: crystal structure of streptococcus suis mannonate2 dehydratase complexed with substrate analogue
28	c2hk1D_	 Alignment	not modelled	42.5	13	PDB header: isomerase Chain: D: PDB Molecule: d-psicose 3-epimerase; PDBTitle: crystal structure of d-psicose 3-epimerase (dpease) in the presence of2 d-fructose

29	d1hara_	Alignment	not modelled	42.0	7	Fold: DNA/RNA polymerases Superfamily: DNA/RNA polymerases Family: Reverse transcriptase
30	c2e67D_	Alignment	not modelled	38.5	23	PDB header: structural genomics, unknown function Chain: D: PDB Molecule: hypothetical protein tthb029; PDBTitle: crystal structure of the hypothetical protein tthb029 from thermus2 thermophilus hb8
31	c3epmB_	Alignment	not modelled	38.0	20	PDB header: biosynthetic protein Chain: B: PDB Molecule: thiamine biosynthesis protein thic; PDBTitle: crystal structure of caulobacter crescentus thic
32	c2ou4C_	Alignment	not modelled	37.3	15	PDB header: isomerase Chain: C: PDB Molecule: d-tagatose 3-epimerase; PDBTitle: crystal structure of d-tagatose 3-epimerase from2 pseudomonas cichorii
33	d1xima_	Alignment	not modelled	36.8	28	Fold: TIM beta/alpha-barrel Superfamily: Xylose isomerase-like Family: Xylose isomerase
34	c2pfsA_	Alignment	not modelled	35.6	13	PDB header: structural genomics, unknown function Chain: A: PDB Molecule: universal stress protein; PDBTitle: crystal structure of universal stress protein from nitrosomonas2 europaea
35	d1nq6a_	Alignment	not modelled	34.9	13	Fold: TIM beta/alpha-barrel Superfamily: (Trans)glycosidases Family: beta-glycanases
36	c3hgmD_	Alignment	not modelled	33.7	14	PDB header: signaling protein Chain: D: PDB Molecule: universal stress protein tead; PDBTitle: universal stress protein tead from the trap transporter2 teaabc of halomonas elongata
37	d1qtlA_	Alignment	not modelled	33.3	23	Fold: TIM beta/alpha-barrel Superfamily: Xylose isomerase-like Family: Xylose isomerase
38	d1qyia_	Alignment	not modelled	31.7	12	Fold: HAD-like Superfamily: HAD-like Family: Hypothetical protein MW1667 (SA1546)
39	d1eucb1	Alignment	not modelled	31.7	18	Fold: Flavodoxin-like Superfamily: Succinyl-CoA synthetase domains Family: Succinyl-CoA synthetase domains
40	c3qgaD_	Alignment	not modelled	31.0	23	PDB header: hydrolase Chain: D: PDB Molecule: fusion of urease beta and gamma subunits; PDBTitle: 3.0 a model of iron containing urease urea2b2 from helicobacter2 mustelae
41	c3mvaA_	Alignment	not modelled	29.1	13	PDB header: ligase Chain: A: PDB Molecule: udp-n-acetylmuramate:l-alanyl-gamma-d-glutamyl-medo- PDBTitle: crystal structure of a domain from a putative udp-n-acetylmuramate:l-2 alanyl-gamma-d-glutamyl-medo-diaminopimelate ligase from haemophilus3 ducreyi 35000hp
42	d1v6wa2	Alignment	not modelled	28.2	19	Fold: TIM beta/alpha-barrel Superfamily: (Trans)glycosidases Family: beta-glycanases
43	d1xlmA_	Alignment	not modelled	27.6	19	Fold: TIM beta/alpha-barrel Superfamily: Xylose isomerase-like Family: Xylose isomerase
44	d1ulza2	Alignment	not modelled	26.2	25	Fold: PreATP-grasp domain Superfamily: PreATP-grasp domain Family: BC N-terminal domain-like
45	d2j9ga2	Alignment	not modelled	25.7	25	Fold: PreATP-grasp domain Superfamily: PreATP-grasp domain Family: BC N-terminal domain-like
46	c3c6cA_	Alignment	not modelled	25.4	14	PDB header: hydrolase Chain: A: PDB Molecule: 3-keto-5-aminohexanoate cleavage enzyme; PDBTitle: crystal structure of a putative 3-keto-5-aminohexanoate cleavage2 enzyme (reut_c6226) from ralstonia eutropha jmp134 at 1.72 a3 resolution
47	c3louB_	Alignment	not modelled	24.8	23	PDB header: hydrolase Chain: B: PDB Molecule: formyltetrahydrofolate deformylase; PDBTitle: crystal structure of formyltetrahydrofolate deformylase (yp_105254.1)2 from burkholderia mallei atcc 23344 at 1.90 a resolution
48	d2c1ia1	Alignment	not modelled	24.7	16	Fold: 7-stranded beta/alpha barrel Superfamily: Glycoside hydrolase/deacetylase Family: NodB-like polysaccharide deacetylase
49	c1k97A_	Alignment	not modelled	24.6	16	PDB header: ligase Chain: A: PDB Molecule: argininosuccinate synthase; PDBTitle: crystal structure of e. coli argininosuccinate synthetase in complex2 with aspartate and citrulline
50	c3bzjA_	Alignment	not modelled	24.5	16	PDB header: hydrolase Chain: A: PDB Molecule: uv endonuclease; PDBTitle: uvde k229l
51	d1ur1a_	Alignment	not modelled	24.0	15	Fold: TIM beta/alpha-barrel Superfamily: (Trans)glycosidases Family: beta-glycanases
52	d2glka1	Alignment	not modelled	23.6	24	Fold: TIM beta/alpha-barrel Superfamily: Xylose isomerase-like Family: Xylose isomerase
53	c3sg0A_	Alignment	not modelled	23.5	12	PDB header: signaling protein Chain: A: PDB Molecule: extracellular ligand-binding receptor; PDBTitle: the crystal structure of an extracellular ligand-binding receptor from2 rhodospseudomonas palustris haa2 PDB header: hydrolase Chain: B: PDB Molecule: adenylate/guanylate cyclase/hydrolase,

54	c3mr7B_	Alignment	not modelled	23.1	17	alpha/beta fold PDBTitle: crystal structure of adenylate/guanylate cyclase/hydrolase from <i>Silicibacter pomeroyi</i>
55	d1zvpa2	Alignment	not modelled	22.1	27	Fold: Ferredoxin-like Superfamily: ACT-like Family: VC0802-like
56	c3chvA_	Alignment	not modelled	21.7	23	PDB header: metal binding protein Chain: A: PDB Molecule: prokaryotic domain of unknown function (duf849) with a tm PDBTitle: crystal structure of a probable undecaprenyl diphosphate synthase2 member (spoa0042) from <i>Silicibacter pomeroyi</i> dss-3 at 1.45 Å resolution
57	c3ugsB_	Alignment	not modelled	21.4	11	PDB header: transferase Chain: B: PDB Molecule: undecaprenyl pyrophosphate synthase; PDBTitle: crystal structure of a probable undecaprenyl diphosphate synthase2 (upps) from <i>Campylobacter jejuni</i>
58	c3n2aA_	Alignment	not modelled	21.4	17	PDB header: ligase Chain: A: PDB Molecule: bifunctional folylpolyglutamate synthase/dihydrofolate PDBTitle: crystal structure of bifunctional folylpolyglutamate2 synthase/dihydrofolate synthase from <i>Yersinia pestis</i> CO92
59	c2dclB_	Alignment	not modelled	21.1	23	PDB header: structural genomics, unknown function Chain: B: PDB Molecule: hypothetical upf0166 protein ph1503; PDBTitle: structure of ph1503 protein from <i>Pyrococcus horikoshii</i> OT3
60	d1uasa2	Alignment	not modelled	21.0	8	Fold: TIM beta/alpha-barrel Superfamily: (Trans)glycosidases Family: Amylase, catalytic domain
61	d1hl9a2	Alignment	not modelled	20.8	10	Fold: TIM beta/alpha-barrel Superfamily: (Trans)glycosidases Family: Putative alpha-L-fucosidase, catalytic domain
62	c3tpaA_	Alignment	not modelled	20.4	9	PDB header: heme binding protein Chain: A: PDB Molecule: heme-binding protein a; PDBTitle: structure of hbpa2 from <i>Haemophilus parasuis</i>
63	c3o1lB_	Alignment	not modelled	20.1	14	PDB header: hydrolase Chain: B: PDB Molecule: formyltetrahydrofolate deformylase; PDBTitle: crystal structure of a formyltetrahydrofolate deformylase (pspto_4314)2 from <i>Pseudomonas syringae</i> pv. tomato str. dc3000 at 2.20 Å resolution
64	d1abra_	Alignment	not modelled	20.1	15	Fold: Ribosome inactivating proteins (RIP) Superfamily: Ribosome inactivating proteins (RIP) Family: Plant cytotoxins
65	c1ygyA_	Alignment	not modelled	20.1	21	PDB header: oxidoreductase Chain: A: PDB Molecule: d-3-phosphoglycerate dehydrogenase; PDBTitle: crystal structure of d-3-phosphoglycerate dehydrogenase from <i>Mycobacterium tuberculosis</i>
66	c2i7xA_	Alignment	not modelled	19.9	21	PDB header: rna binding protein, protein binding Chain: A: PDB Molecule: protein cft2; PDBTitle: structure of yeast cpsf-100 (ydh1p)
67	d2i7xa1	Alignment	not modelled	19.9	21	Fold: Metallo-hydrolase/oxidoreductase Superfamily: Metallo-hydrolase/oxidoreductase Family: beta-CASP RNA-metabolising hydrolases
68	d1st6a4	Alignment	not modelled	19.8	25	Fold: Four-helical up-and-down bundle Superfamily: alpha-catenin/vinculin-like Family: alpha-catenin/vinculin
69	c3cpgA_	Alignment	not modelled	19.8	12	PDB header: structural genomics, unknown function Chain: A: PDB Molecule: uncharacterized protein; PDBTitle: crystal structure of an unknown protein from <i>Bifidobacterium adolescentis</i>
70	d2gc6a1	Alignment	not modelled	19.7	17	Fold: MurD-like peptide ligases, peptide-binding domain Superfamily: MurD-like peptide ligases, peptide-binding domain Family: Folylpolyglutamate synthetase, C-terminal domain
71	c3fh0A_	Alignment	not modelled	19.3	15	PDB header: structural genomics, unknown function Chain: A: PDB Molecule: putative universal stress protein kpn_01444; PDBTitle: crystal structure of putative universal stress protein kpn_01444-2 atpase
72	c3t0nA_	Alignment	not modelled	19.2	10	PDB header: signaling protein Chain: A: PDB Molecule: twin-arginine translocation pathway signal; PDBTitle: crystal structure of twin-arginine translocation pathway signal from <i>Rhodospseudomonas palustris</i> bisb5
73	c2fvhB_	Alignment	not modelled	18.9	29	PDB header: hydrolase Chain: B: PDB Molecule: urease gamma subunit; PDBTitle: crystal structure of rv1848, a urease gamma subunit urea (urea2 amidohydrolase), from <i>Mycobacterium tuberculosis</i>
74	d1pb5a_	Alignment	not modelled	18.6	60	Fold: Notch domain Superfamily: Notch domain Family: Notch domain
75	c1w96B_	Alignment	not modelled	18.6	11	PDB header: ligase Chain: B: PDB Molecule: acetyl-coenzyme a carboxylase; PDBTitle: crystal structure of biotin carboxylase domain of acetyl-coenzyme a carboxylase from <i>Saccharomyces cerevisiae</i> in3 complex with soraphen a
76	c2xzmO_	Alignment	not modelled	18.4	15	PDB header: ribosome Chain: O: PDB Molecule: rps13e; PDBTitle: crystal structure of the eukaryotic 40s ribosomal2 subunit in complex with initiation factor 1. this file3 contains the 40s subunit and initiation factor for4 molecule 1
77	d1bxca_	Alignment	not modelled	18.3	28	Fold: TIM beta/alpha-barrel Superfamily: Xylose isomerase-like Family: Xylose isomerase
78	c3la4A_	Alignment	not modelled	18.2	31	PDB header: hydrolase Chain: A: PDB Molecule: urease; PDBTitle: crystal structure of the first plant urease from jack bean

						(canavalia2 ensiformis)
79	d1i60a	Alignment	not modelled	18.0	17	Fold: TIM beta/alpha-barrel Superfamily: Xylose isomerase-like Family: loll-like
80	c3sdoB	Alignment	not modelled	17.9	16	PDB header: oxidoreductase Chain: B: PDB Molecule: nitrilotriacetate monooxygenase; PDBTitle: structure of a nitrilotriacetate monooxygenase from burkholderia2_pseudomallei
81	d1st6a3	Alignment	not modelled	17.8	15	Fold: Four-helical up-and-down bundle Superfamily: alpha-catenin/vinculin-like Family: alpha-catenin/vinculin
82	c3dddA	Alignment	not modelled	17.7	11	PDB header: transferase Chain: A: PDB Molecule: putative acetyltransferase; PDBTitle: crystal structure of a putative acetyltransferase (np_142035.1) from2 pyrococcus horikoshii at 2.25 a resolution
83	c1kh2D	Alignment	not modelled	17.5	24	PDB header: ligase Chain: D: PDB Molecule: argininosuccinate synthetase; PDBTitle: crystal structure of thermus thermophilus hb82 argininosuccinate synthetase in complex with atp
84	c3civA	Alignment	not modelled	17.5	15	PDB header: hydrolase Chain: A: PDB Molecule: endo-beta-1,4-mannanase; PDBTitle: crystal structure of the endo-beta-1,4-mannanase from2 alicyclobacillus acidocaldarius
85	c3ue9A	Alignment	not modelled	17.4	18	PDB header: ligase Chain: A: PDB Molecule: adenylosuccinate synthetase; PDBTitle: crystal structure of adenylosuccinate synthetase (ampsase) (pura) from2 burkholderia thailandensis
86	d1nfpa	Alignment	not modelled	17.0	19	Fold: TIM beta/alpha-barrel Superfamily: Bacterial luciferase-like Family: Non-fluorescent flavoprotein (luxF, FP390)
87	d2fdra1	Alignment	not modelled	16.9	13	Fold: HAD-like Superfamily: HAD-like Family: beta-Phosphoglucosyltransferase-like
88	d1o94c	Alignment	not modelled	16.5	15	Fold: Adenine nucleotide alpha hydrolase-like Superfamily: Adenine nucleotide alpha hydrolases-like Family: ETFP subunits
89	d1efpb	Alignment	not modelled	16.4	16	Fold: Adenine nucleotide alpha hydrolase-like Superfamily: Adenine nucleotide alpha hydrolases-like Family: ETFP subunits
90	c3t66A	Alignment	not modelled	16.1	27	PDB header: transport protein Chain: A: PDB Molecule: nickel abc transporter (nickel-binding protein); PDBTitle: crystal structure of nickel abc transporter from bacillus halodurans
91	c3ly1C	Alignment	not modelled	16.0	19	PDB header: transferase Chain: C: PDB Molecule: putative histidinol-phosphate aminotransferase; PDBTitle: crystal structure of putative histidinol-phosphate aminotransferase2 (yp_050345.1) from erwinia carotovora atroseptica scri1043 at 1.80 a3 resolution
92	d2c71a1	Alignment	not modelled	15.9	21	Fold: 7-stranded beta/alpha barrel Superfamily: Glycoside hydrolase/deacetylase Family: NodB-like polysaccharide deacetylase
93	d1gvia2	Alignment	not modelled	15.5	30	Fold: Glycosyl hydrolase domain Superfamily: Glycosyl hydrolase domain Family: alpha-Amylases, C-terminal beta-sheet domain
94	d1ztwa1	Alignment	not modelled	15.4	11	Fold: DNA/RNA polymerases Superfamily: DNA/RNA polymerases Family: Reverse transcriptase
95	d2pw6a1	Alignment	not modelled	15.4	20	Fold: Phosphorylase/hydrolase-like Superfamily: LigB-like Family: LigB-like
96	c3elyA	Alignment	not modelled	15.2	18	PDB header: transferase Chain: A: PDB Molecule: methyltransferase; PDBTitle: wesselsbron virus methyltransferase in complex with adohcy
97	d8ruca2	Alignment	not modelled	15.1	24	Fold: Ferredoxin-like Superfamily: RuBisCO, large subunit, small (N-terminal) domain Family: Ribulose 1,5-bisphosphate carboxylase-oxygenase
98	c2c2xB	Alignment	not modelled	14.8	20	PDB header: oxidoreductase Chain: B: PDB Molecule: methylenetetrahydrofolate dehydrogenase- PDBTitle: three dimensional structure of bifunctional2 methylenetetrahydrofolate dehydrogenase-cyclohydrolase3 from mycobacterium tuberculosis
99	c2grvC	Alignment	not modelled	14.7	14	PDB header: biosynthetic protein Chain: C: PDB Molecule: lpqw; PDBTitle: crystal structure of lpqw